



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

**REGION 10**

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**OFFICE OF  
ENVIRONMENTAL  
CLEANUP**

**MEMORANDUM**

**DATE:** July 18, 2016

**SUBJECT:** Draft Revised Preliminary Hot Spot Evaluation  
Former Rhône-Poulenc Site, Portland Oregon  
ECSI #115  
June 3, 2016

**FROM:** Eva DeMaria, Remedial Project Manager *EDM*

**TO:** Dave Lacey, Project Manager  
Oregon Department of Environmental Quality

Following are the United States Environmental Protection Agency's (EPA's) comments on the June 2016 Draft Revised Preliminary Hot Spot Evaluation Former Rhône-Poulenc Site. Golder Associates Inc. prepared the Hot Spot Evaluation on behalf of StarLink Logistics Inc. The Former Rhône-Poulenc Site is located at 6193 NW 61<sup>st</sup> Avenue in Portland, Oregon and listed in Oregon Department of Environmental Quality's (DEQ's) cleanup program as ECSI #155. The former Rhône-Poulenc property is located upland of river mile 7 west (RM7W).

EPA understands that the purpose of the revised hot spot evaluation (HSE) is to identify hot spots associated with the former Rhône-Poulenc property in accordance with Oregon Administrative Code (OAR 340-122-0040(4)) and DEQ's *Guidance for Identification of Hot Spots* (DEQ 1998). Hot spots identified in the HSE will be further evaluated during the Feasibility Study (FS). EPA has reviewed the revised HSE to assess the constituents of interest (COI) that impact groundwater, which has the potential to discharge to the Willamette River, and the COIs are carried forward to the FS.

EPA's comments are presented in the following sections. Comments are separated as "Primary," which identify concerns that must be resolved to achieve the assessment's objective; "To Be Considered," which, if addressed or resolved, would reduce uncertainty, improve confidence in the document's conclusions, and/or best support the assessment's objectives; and "Matters of Style," which substantially or adversely affect the presentation or understanding of the technical information provided in the report.

**Primary Comments**

1. The HSE is based on groundwater data collected in 2010 and older datasets. EPA previously commented about the significant uncertainty with any conclusions related to the pathway within the Alluvial Colluvial Gravel (ACG) and Columbia River Basalt (CRB) units owing to the lack of monitoring wells and sampling data representative of these units. The characterization is lacking data both spatially (vertically and horizontally) and temporally. Recent detections of the former Rhône-Poulenc property chemical, 1,2-dichlorobenzene (1,2-DCB), in groundwater extraction wells operating in the northern portion of the Siltronic property and southern GASCO property indicates that the former Rhône-Poulenc property chemical is migrating via the deep groundwater pathway across Siltronic's property and is currently captured by GASCO's

groundwater extraction system. The effect of the groundwater extraction system on the Rhône-Poulenc contaminant distribution underlying Siltronic's property is not known and needs to be evaluated as part of the FS. Ongoing groundwater monitoring is needed to evaluate the effect of the groundwater extraction system on mobilization of former Rhône-Poulenc property contaminants in the ACG and CRB. The HSE should be updated based on new groundwater data to be collected as part of the FS Data Gaps Work Plan.

2. Based on the assumption that deep groundwater does not discharge to the river, the HSE excludes a large area of deep groundwater underlying Siltronic's property where 1,2-DCB, 1,3-dichlorobenzene (1,3-DCB), 1,4-dichlorobenzene (1,4-DCB), trichloroethylene (TCE), vinyl chloride, Silvex and dichlorprop exceed the groundwater-surface water (GW-SW) hot spot criteria. This interpretation is inconsistent with the data presented in DEQ's 2015 Remedial Investigation/Source Control Evaluation (RI/SCE) Addendum (DEQ 2015). The RI/SCE Addendum (DEQ 2015) presented monitoring well data and reconnaissance groundwater data from Siltronic/GASCO borings, which showed continuous 1,2-DCB concentrations in groundwater extending from the former Rhône-Poulenc property across Siltronic's property and to the mudline of the Willamette River. Based on this information, the GW-SW hot spot for 1,2-DCB, 1,3-DCB, 1,4-DCB, TCE, vinyl chloride, Silvex and dichlorprop should not exclude the area of deep groundwater underlying Siltronic's property.
3. The Portland Harbor Superfund Site (PHSS) Preliminary Remediation Goals (PRGs) are the values used for determining potential threats to the Willamette River and are therefore appropriate values to use in establishing the GW-SW hot spot criteria. EPA recommends delimiting groundwater hot spots based on the PRGs for Remedial Action Objectives (RAOs) 4 and 8.
4. The FS assumed a total thickness of 30 feet over the hot spot footprint as a basis for estimating the volume of the deep groundwater hot spot. No basis is given for the 30-foot thickness. Cross sections of the hot spot area showing the lowermost extent of groundwater exceeding the GW-SW hot spot criteria should be presented to support the assumed 30-foot thickness. This will be a critical parameter in selecting and evaluating remedial technologies in the FS.
5. The HSE should be revised to clearly identify residual NAPL as a hot spot. Section 7.0 states "the residual NAPL area is not directly carried forward as a NAPL hot spot, however, it is included in the soil and groundwater evaluations and portions will be carried forward to the FS if identified as a preliminary hot spot by the groundwater, risk-based soil, or mobility-based soil evaluations." Section 4.2.3 Mobility-Based Soil Evaluation Summary concludes, "NAPL likely represents a non-soil source of these COIs to groundwater." Additionally, NAPL is likely "highly concentrated," which meets the definition of a hot spot included in the *Guidance for Identification of Hot Spots* (DEQ 1998) and as defined per OAR 340-122-0115(32).
6. The evaluation of NAPL hot spots at the former Rhône-Poulenc site is laterally and vertically incomplete and does not describe the composition of NAPL; a description of NAPL composition

is critical for evaluating COIs dissolved in groundwater. The revised NAPL area on Figure 5-3 does not appear to be supported by data because:

- a. The evaluation makes no distinction between light non-aqueous phase liquid (LNAPL), dense non-aqueous phase liquid (DNAPL), and non-aqueous phase liquid (NAPL) in the unsaturated zone. In addition to the chemical composition, a description of the physical properties of NAPL are critical for evaluating remedial technologies in the FS.
  - b. The NAPL evaluation was completed using data from 1983 to 2013 and may not represent current or recent conditions. Additionally, some data is annotated “date unknown.” If the date of the investigation is unknown then the data is unreliable for temporal evaluation and cannot be used in combination with other data.
  - c. There is a bend in the RI/SCE NAPL Area Outline presented on Figures 5-2 and 5-3 north of P-07, but there are no soil borings north of P-07 to delimit the extent of NAPL. The nearest soil boring outside the extent of NAPL is BST1W-88 and NAPL was observed in the soil boring in 1995. The evaluation of the lateral extent of NAPL needs to be clearly supported with existing or recent data. A discussion of the uncertainty associated with historic data should be included with the evaluation of NAPL distribution.
  - d. The text or figure does not describe the total depths of soil borings used to evaluate the extent of NAPL. For example, NAPL was observed at 3 feet below ground surface (ft bgs) at HE-14 and the nearest step out soil boring to the southeast MW-03-68 had NAPL observed at 58 ft-bgs. If shallow soil borings were not advanced to depths where NAPL has historically been reported, or to a confining layer, then those locations cannot be used to estimate the lateral and vertical extent of NAPL.
  - e. A description of the methods used to determine if NAPL is residual or mobile should be included in the text or described on Figure 5-3.
  - f. The thickness of NAPL in groundwater and soil should be described on Figure 5-3 or in the text.
  - g. The presence of NAPL in the shallow, ACG, and CRBG groundwater should be described in the HSE.
7. The HSE attributes benzene and other COIs to urban/industrial background sources. This conclusion should be supported with data and a discussion of COI sources outside the area of the former Rhône-Poulenc property or removed from the HSE. For example, Section 3.1.3 Deep Groundwater Preliminary Hot Spot Identification describes detections of benzene that contribute to the hot spot but are not attributable to the former Rhône-Poulenc property. It is unclear if this discussion implies that a portion(s) of the benzene plume may not be addressed in the FS.

## **To Be Considered Comments**

1. Section 3.1.2, page 10 – States that deeper groundwater beneath Siltronic’s property does not discharge to the River, and references S8.3.3 of the Supplemental Section 8 Report (SS8 Report; Golder, 2012). S8.3.3 VOCs in Groundwater of the Supplemental Section 8 Report does not include a discussion of deeper groundwater discharging to the Willamette River beneath Siltronic’s property. Additionally, this information contradicts the information included for Section 3.1.1 which describes contaminants that have a complete pathway to the Willamette River in deep groundwater. Section 3.1.2 should be revised to be consistent with Supplemental Section 8 and other portions of the HSE.
2. Section 3.1.3, page 11 – Benzene (Figure 3.1-04) the bullet describes that benzene concentrations attenuate to below the risk based concentration (RBC) before reaching the Willamette River. Figure 3.1-04 shows benzene at RP-24-85 above the RBC, adjacent to the Willamette River, and outside the leading edge of the benzene plume. The discussion for benzene should include a discussion of the geochemistry and hydrogeology information used to conclude that benzene is attenuating and an explanation for the concentration above RBC sampled at RP-24-85.
3. To assist with evaluating the shallow groundwater pathway via Outfall 22B, the outfall should be included on figures showing contaminant concentrations in shallow groundwater (i.e., 3.2-01 through 3.2-21).
4. Section 4.2.2, page 33 – Bullet for 1,3-DCB states that soil sample locations in the southern end of the HA with 1,3-DCB concentrations above 10,000 µg/kg were not identified as a mobility-based soil hot spot because there is not a pathway from the sample locations to preliminary groundwater hot spot areas. Figure 4.2-02 presents a 1,3-DCB hot spot in shallow groundwater at HA. It is unclear why a 1,3-DCB hot spot is not identified around the locations in the southern portion of the HA.
5. Section 7.0, page 42 – Second sentence within Non-aqueous Phase Liquid states, “Due to the low density/frequency of recent NAPL observations, the residual NAPL area is not directly carried forward as a NAPL hot spot...” To clarify what work was performed and to define what “low density/frequency” means, the number of observations of residual NAPL, how NAPL was determined to be residual and not mobile, where NAPL observations were recorded, and the total number of observations made should be included in the HSE.

## References

2015. DEQ. Rhone-Poulenc Remedial Investigation Report: Addendum-RI/SCE Report (November 19, 2010). April.
1998. DEQ. Guidance for Identification of Hot Spots. April 23.